

Los Angeles Department of Water and Power - 100% Renewable Energy Study
Advisory Group Meeting #2
Thursday, August 3, 2017, 8:45 am to 1:30 pm

Meeting Summary

Location

City of Los Angeles Department of Water and Power (LADWP)
John Ferraro Building
111 Hope Street
Room 1514
Los Angeles, CA 90012

Attendees

Advisory Group Members

Ackley Padilla, Council District Offices - CD 6
Alexandra Nagy, Food and Water Watch
Allison Smith, SoCal Gas
Andrea Leon-Grossman, Food and Water Watch
Andy Schraeder, Council District Office – Paul Koretz
Bonny Bentzin, University of California, Los Angeles (UCLA)
Camden Collins, Office of Public Accountability (Rate Payer Advocate)
Carlos Baldenegro, Port of Los Angeles (POLA)
Cris Liban, Los Angeles County Metro
Erica Blyther, Los Angeles World Airports (LAWA)
Evan Gillespie, Sierra Club
Fred Pickel, Office of Public Accountability (Rate Payer Advocate)
Hilary Firestone, Natural Resource Defense Council (NRDC)
Irene Burga, Environmental Defense Fund (EDF)
Jack Durland, Valero Wilmington Refinery
Jack Humphreville, Greater Wilshire Neighborhood Council
Jim Caldwell, Center for Energy Efficiency and Renewable Technology
Lauren Faber O'Connor, Office of the Mayor
Leslie Abbott, IBEW – Local 18
Loraine Lundquist, California State University, Northridge (CSUN)
Matt Gregori, Southern California Gas (SoCal Gas)
Matt Hale, Council District Offices - CD 2
Mike Webster, Southern California Public Power Authority (SCPPA)
Rafael Prieto, Chief Legislative Legislative Analyst (CLA)
Rebecca Andreassen, Office of the Mayor
Sandra Beasley, Los Angeles Chamber of Commerce (LA Chamber)
Shane Phillips, Central City Association
Ted Bardacke, Office of the Mayor
Ted Bardacke, Office of the Mayor
Tim O'Connor, Environmental Defense Fund

Tony Wilkinson, Neighborhood Council
Tyler Aguirre, Neighborhood Council Sustainability Alliance
Zarui Chaparyan, Los Angeles Business Council (LABC)

LADWP Staff

Anton Sy
Atique Rahman
Carol Tucker
Dawn Cotterell
Eric Montag
Jean Claude Bertet, Los Angeles City Attorney, LADWP
Priscilla Kasha, Los Angeles City Attorney, LADWP
Stephanie Spicer

Others

Scott Haase, National Renewable Energy Laboratory (NREL)
Aaron Bloom, NREL
Ramin Faramarzi, NREL
Joan Isaacson, Kearns & West
Taylor York, Kearns & West

Discussion Summary

1. Welcome and Introductions

Joan Isaacson, Lead Facilitator from Kearns & West, welcomed Advisory Group members, gave an overview of the agenda (see Attachment A), explaining that time was set aside for discussion as part of each agenda item, with additional discussion time reserved at the end. She made several additional notes:

- Summaries will be prepared for all meetings, and will be available, along with the presentation (see Attachment B), after the meeting and on the Study website.
- There may be an opportunities for Advisory Group members to participate in more focused webinars between Advisory Group meetings, if there is an interest.
- There may be an opportunity for Advisory Group members to participate in a field tour, if there is an interest.

Eric Montag, Senior Manager of Planning & Strategic Initiatives for LADWP, gave a short introduction of the Los Angeles Department of Water and Power team, as well as the NREL and Kearns & West Team (Research Partner). Each member of this diverse Advisory Group will bring their own expertise, thoughts, excitement, and resources to this major initiative. Eric noted that NREL is a great partner, and they are approaching this Study with knowledge, expertise, resources, and excitement. It is unlikely that the City's power system has undertaken a study of this scale before, and Los Angeles demonstrating leadership nationally and globally, with study implications for others embarking on similar paths.

Anton Sy, DWP Project Manager, recognized the LADWP and Research Partner teams, and encouraged the Advisory Group to critique and ask questions throughout the Study. Scott Haase, NREL introduced himself and the NREL team, including Aaron Bloom, and Ramin Faramarzi. He noted that Ramin is

located in NREL's Los Angeles office and is currently working with LADWP on energy efficiency. Joan Isaacson, Kearns & West, introduced Kearns & West, and noted that the firm's role in facilitating the Advisory Group, ensure suitable meeting formats to ensure that all members are able to give valuable input.

Questions and Discussion:

Q: How does the Study differ from other efforts to adopt renewable energy in the region?

A: There is a synergy, but this is independently organized and operated.

2. Advisory Group Member Introductions and Identification of Alternates

Advisory Group members were asked to introduce themselves and to highlight the resources that their organization can contribute to the Study. Members were also asked to indicate primary and alternate members from their organization. Joan Isaacson, Kearns & West, noted that primaries and alternates are encouraged to attend all meetings together and that, with consistency in mind, and that primaries should update alternatives after meetings that they did not attend.

Tyler Aguirre, Neighborhood Council Sustainability Alliance - The Neighborhood Council Sustainability Alliance is an officially recognized alliance, composed of 38 neighborhood councils from around Los Angeles. While they have representation throughout Los Angeles, they have a stronger presence in the West Side and San Fernando Valley communities. Their goal is to unite Los Angeles neighborhood councils on sustainability issues, and they can assist the Advisory Group in communicating with these councils.

Primary: Ernest Hidalgo, Alternate: Tyler Aguirre

Loraine Lundquist, California State University, Northridge (CSUN) – As a research university, CSUN has a number of resources available to the Study, including expertise in electrical engineering, energy storage, and economic modeling. CSUN's Institute for Sustainability has significant experience engaging and educating the community on energy programs, particularly within K-12 classrooms in the San Fernando Valley. Topics range from energy efficiency to solar energy.

Primary: Loraine Lundquist, Alternate: Austin Erickson

Alexandra Nagy and Andrea Leon-Grossman, Food and Water Watch – Food and Water Watch is a National Organization, with offices in Los Angeles. Part of the organization's focus is eliminating natural gas storage as part of the transition to 100% renewable energy, and they are currently involved in campaigns regarding the Aliso Canyon and Playa Del Rey natural gas storage facilities. The organization is also working with Synapse Energy to conduct modeling similar to that which they would like to see included in the Study, including vehicle electrification and energy efficiency.

Primary: Andrea Leon-Grossman, Alternate: Alexandra Nagy

Jack Durland, Valero Wilmington Refinery – Valero is one of the largest independent refiners in the U.S., and has two refineries in California (Wilmington and Benicia). Power quality is one of the larger issues they must address. Power loss for even fractions of a second can cause major equipment to shut down, possibly leading to equipment and environmental impacts. Jack commented that he can contribute his experience working with the Electric Reliability Council of Texas on renewable energy reliability problems at their large Texas refinery. He added that it is important to consider transmission and other systems that may be vulnerable to power quality problems caused by renewables.

Primary: Jack Durland, Alternate: TBD

Christos Chrysiliou, Los Angeles Unified School District (LAUSD) – LAUSD has established a goal of becoming the most sustainable school district in the nation, aiming for 20% water and energy savings by 2020. The district has identified five to six major projects to achieve these goals, and has identified sites on which they aim to achieve zero net energy.

Primary: Christos Chrysiliou, Alternate: TBD

Shane Phillips, Central City Association – Central City Association is a trade association based in and around Downtown Los Angeles. Its members include policy experts in areas such as housing, development, and transportation. The focus of the Association is more on efficiency than energy production and technology. A significant portion of members are property owners who have considerable influence on land use in the Los Angeles area.

Primary: Shane Phillips, Alternate: Marie Rumsey

Dr. Fred Pickel, Office of Public Accountability (Rate Payer Advocate) – The responsibility of the Office of Public Accountability is to independently analyze proposed increases in water and power rates, including level of customer service. The Office has extensive experience in water, gas, and power, and has worked with industrial, commercial, and residential customers, as well as suppliers and stakeholders in distribution, transmission and other areas.

Primary: Fred Pickel, Alternate: Camden Collins

Cris Liban, Los Angeles County Metro – Metro has established a goal of utilizing 33% renewable energy by 2020, and employs a robust energy program - Metro's energy plan is available on their website. This plan includes electrifying fleets and establishing renewable energy initiatives for infrastructure projects. The organization currently has a Sustainability Council to advise on incorporation of sustainability measures into all initiatives, and invites LADWP to present the Study to the council. Metro considers a mix of fuel sources, not just electricity, including bio methane, and are open to talking with the group about opportunities to partner.

Primary: Cris Liban, Alternate: TBD

Sandra Beasley, Los Angeles Chamber of Commerce (LA Chamber) – The LA Chamber represents over 1,700 business and non-profit organizations in Los Angeles, and has resources including the Energy, Water & Environmental Sustainability Council, expertise in educational programs, and advocacy resources for engaging the local community.

Primary: Jessica Duboff, Alternate: Sandra Beasley

Jack Humphreville and Tony Wilkinson, Neighborhood Council – DWP MOU Oversight – Jack is an active member of the greater Wilshire Neighborhood Council, the Neighborhood Council Coalition, and the LADWP budget advocate. He is concerned with issues of transparency throughout the Study, as well as rates and finances. Tony noted that, with current environmental concerns, water and power have become frequent topics of conversation. He noted that he is excited about the Study, as well the diversity of its Study subjects. He noted the importance of looking at the big picture and considering how power generation fits in with the overall power environment, especially transportation.

Primary: Jack Humphreville, Alternate: Tony Wilkinson

Lauren Faber O'Connor, Rebecca Andreassen, and Ted Bardacke, Office of the Mayor – Lauren expressed appreciation for the diversity of the Study group, and is grateful to the Los Angeles City Council for putting together a motion that can enable the Mayor's vision of 100% renewable, fossil fuel

free, energy in Los Angeles. The Mayor's office increasingly views natural gas as less of a bridge fuel for addressing renewable energy and environmental health. Her contributions to the Advisory Group include ensuring that the Study, as well as the process, is a model for other cities – and that aspects of safety, reliability, affordability, sustainability, equity, and inclusiveness are all included. Ted noted that achieving the 100% renewable energy goal may require some culture change within LADWP.

Primary: Lauren Faber O'Connor, Alternate: TBD

Jean Claude Bertet and Priscilla Kasha, Los Angeles City Attorney, LADWP– The City Attorney's office is monitoring legislation as it applies to renewable energy, and looking forward to a positive outcome from the Advisory Group.

Bonny Bentzin, University of California, Los Angeles (UCLA) – UCLA has established a goal of achieving carbon neutrality by 2025, and currently operates – at capacity – a 42mw co-generation plant. They are currently conducting a solar-thermal study, and are looking at ways to transition 5 million square feet of their facilities to renewable energy.

Primary: Nurit Katz, Alternate: Bonny Bentzin

Hilary Firestone, Natural Resource Defense Council (NRDC) – NRDC is a national non-profit, which brings legal, policy, and scientific expertise to the table. Hillary is involved with creating renewable polices for 20 cities across the country, and is happy to set up city exchanges to share best practices and lessons learned.

Primary: Hillary Firestone, Alternate: TBD

Irene Burga and Tim O'Connor Environmental Defense Fund (EDF) – EDF is currently involved in a project working to identify low-cost monitors that can be deployed by oil and gas facilities. EDF has also been working to identify market barriers to investing in renewables, as well as market conditions that have created a lack of transparency and competition amongst energy resources. They have begun working with the CA Independent System Operator (CAISO) to address this issue. EDF has a very active member base, and would like to discuss blogging and outreach.

Primary: Tim O'Connor, Alternate: Irene Burga

Evan Gillespie, Sierra Club – The Sierra Club has a presence in Los Angeles, and is interested in exploring ways to involve the public in this process. They also have a team of regulatory experts and analysts based in Oakland. As the Study continues, they will be looking for ways to help.

Primary: Evan Gillespie, Alternate: Graciela Geyer

Matt Gregori and Allison Smith, Southern California Gas (SoCal Gas) – SoCal Gas is uniquely positioned to consider safety, reliability, and rate payer impact issues. A focus of the company is on decarbonizing the natural gas system, whether that be through Renewable Natural Gas (RNG) or Hydrogen (H2). SoCal Gas has good working relationships with organizations such as the National Renewable Energy Laboratory and University of California Irvine, to study impacts and advantages of RNG and H2.

Primary: Allison Smith, Alternate: Matt Gregori

Zarui Chaparyan, Los Angeles Business Council – The Los Angeles Business Council conducts many research and educational outreach programs, which inform local policy development. They also work on economic and workforce development.

Primary: Mary Leslie, Alternate: Zarui Chaparyan

Leslie Abbott, IBEW – Local 18 – IBEW Local 18 represents utility employees at all publically held utilities in Los Angeles County. Brian Darcy, Executive Director, has significant experience with electric utilities and can contribute these resources, as well as understanding and institutional memory of LADWP. Leslie expressed concern about changes in LADWP culture as the structure of the power system changes, stressing the importance of staffing, training, and internal communications.

Primary: Leslie Abbott, Alternate: Gus Corona

Mike Webster, Southern California Public Power Authority (SCPPA) – The majority of renewable energy projects built in Los Angeles have come through SCPPA, which works with municipal utilities to build and finance projects efficiently. SCPPA also represents member utilities at the state level, and might play an important part in dialogues at state level as bills such as SB 100 move forward.

Primary: Mike Webster, Alternate: Ted Beatty

Erica Blyther, Los Angeles World Airports (LAWA) – LAX is undergoing major modernization, and has several initiatives aimed at decarbonizing airport operations. LAWA is a Green Energy Partner with LADWP and has a level two Carbon Certification, with plans to move to a level three.

Primary: Erica Blyther, Alternate: Kendrick Okuda

Jim Caldwell, Center for Energy Efficiency and Renewable Technology (CEERT) – CEERT is a non-profit organization in Sacramento that is involved with State-level policy development on renewables and energy efficiency. Jim previously served as Assistant General Manager at LADWP, and commented that activities around this Study have already made an impact, and should act as a template for the State.

Primary: Jim Caldwell, Alternate: Dr. Liz Anthony

Carlos Baldenegro, Port of Los Angeles (POLA) – The Port is currently working on a 10 megawatt solar project, as well as other initiatives to reduce greenhouse gas emissions. The Port recently reissued a Clean Air Action plan, which identifies ways to reduce emissions from ships, trucks, and vehicles used to move freight within the port.

Primary: Carlos Baldenegro, Alternate: Shaouki Aboulhosn

Andy Schrader, Los Angeles Council District 5 – Andy conveyed that Councilmember Koretz would like to see true cost of energy resources included in the Study – from extraction through use. He is also concerned with jobs and job training for workers that may be displaced by the renewable energy industry.

Matthew Padilla, Council District Office – Los Angeles Council District 6 – The Councilmember is concerned with prioritizing how renewable energy goals are met in light of environmental justice issues, and address communities of color.

3. Advisory Group Overview, Structure, Charter, and Roles

Joan Isaacson, Kearns & West, gave an overview of the Advisory Group Protocols and Operating Principles (see Attachment C). The protocols are available to group members, and address the following areas:

- Purpose of the Advisory Group
- Advisory Group Charter
- Participation and Collaboration Principles

- Advisory Group composition
- Advisory Group Working Teams – Subgroups of the Advisory Group that may be convened on an as-needed basis
- Details about the Study Research Partner, NREL
- Primary members and alternates
- Meeting schedule, locations, agendas, and summaries
- Information sharing with other Advisory Group members
- Email communication
- Media interaction
- Public involvement in the Study – Joan noted that input from the Advisory Group on the public involvement plan will be solicited at the fall meeting.
- Point of contact for Advisory Group members is Anton Sy.

Questions and Discussion:

Q: How will the Advisory Group Working Teams be facilitated and coordinated?

A: Working Teams, if activated, will be facilitated and supported by the LADWP and the Research Partner.

Q: Has LADWP considered inviting the press to Advisory Group meetings, such as the Los Angeles Times, to attend the meetings?

A: LADWP recognizes that the intent of convening the Advisory Group is to facilitate expert discussion, the results of which will be shared with the public. Openness and transparency are important, and the public process will be addressed in detail in the Public Outreach Plan.

Q: Are these meetings subject to the requirements of the Brown Act?

A: No. These meetings are intended to be a forum for expert input. The LADWP and the Research Partner is considering multiple mechanisms for disseminating information and soliciting feedback from the public.

Q: Where should media inquiries be directed?

A: This is still under review, but Anton Sy, LADWP will be the point of contact until such a decision is made. Anton will refer inquiries to others within LADWP as needed.

Q: What is the outcome, or product of this effort?

A: This will be discussed in the Study presentation.

Q: Has '100% Renewable' been defined?

A: This will be discussed in the Study presentation.

Joan Isaacson, Kearns & West, noted that future meetings will be much more discussion oriented.

4. Study Overview and Potential Challenges

Aaron Bloom, NREL Project Manager, gave an overview of the Study (see slides in Attachment B), as well as potential challenges. The LADWP system is very complex, and the agency has made, and continues to make, investments in the system that have positioned it well for pursuing 100% renewable energy.

Aaron highlighted a few of LADWP's system assets, such as HVDC lines, pumped hydro facilities, wind, solar, geothermal, and electric vehicle charging. These assets have made LADWP a leader in the adoption of renewable energy sources, and will be important tools for achieving a 100% renewable energy goal. Some important considerations for reaching 100% renewable energy are the CAISO Energy Imbalance Market Initiatives (helping members trade energy imbalances), the LADWP Once-Through Cooling Study, SB 100 (which sets statewide target renewable energy goals), and projects and policies of neighboring jurisdictions.

Aaron gave an overview of NREL, and noted that the job of the lab is not to make recommendations, but rather to present the facts at the beginning, middle, and end of the Study, enabling decision-makers to make good decisions.

The growth of renewables has exceeded expectations, but studying 'high penetrations' of renewables (over 50%) is still a fairly new idea. NREL's Renewable Electricity Futures study is one of the first studies to look at high penetrations of renewable energy, and is available online. Other early, and sometimes controversial, studies have been done on this topic, around which there is a fair amount of skepticism – illustrating that this is a very difficult subject to study. Aaron noted the importance of understanding the externalities of greenhouse gas reduction, including rates for consumers.

Despite the challenges, there is a strong push to move in the direction of 100% renewable. Some agencies are talking about addressing this in various ways, including purchase of carbon credits. LADWP is unique in that it is not considering shortcuts, but looking at an outright 100% reduction in fossil fuel use.

Aaron asked Advisory Group members to comment on why this study is unique, and why LADWP is uniquely positioned for it. Responses were as follows:

- Intermittent renewable generation, and balancing financial and physical aspects.
- Large study scope, focused on a large system.
- Basic understanding of the challenges of renewable energy – for example, the sun doesn't rise at night.
- Power quality
- Future growth of the City – how much more demand will be placed on the system?
- Forecasting or determining a timeline in which we might reach 100% renewable.
- Resiliency
- "Not in My Backyard (NIMBY) – Understanding diverse perspectives from Los Angeles community members – differing levels of income, various social justice issues, etc.
- LADWP is a municipally owned utility, which presents unique challenges and advantages. LADWP is a vertically integrated system, and has unique control of the direction of investment.
- Economics – how to transition to 100% renewable energy affordably.
- Does managing renewable energy sources distract from your core job? Workers should not have to become experts in renewable energy to perform their jobs effectively.
- Study the practicality of transitioning to 100% renewable, and set a timeline and schedule that can enable a robust discussion. Take steps to ensure that 100% renewable is not just a buzzword, but is the end goal brought about through an actionable plan.
- Opportunity through future technology development - anticipating technological development and cost.

- Energy efficiency in homes and in the broader community. Reducing demand is a critical piece – how can DWP promote conservation? Conservation can go a long way in reducing energy demand as well as the need to build more generation and infrastructure.
- Statewide incentives and policy uncertainty.
- Financial practicality.
- Operational practices of LADWP system. We have the capacity, but don't necessarily use it all of the time. There is a balance between technical and practical capabilities of the system.
- Los Angeles' role as a major transportation and shipping corridor, large economic drivers. Unique, large, influential loads.
- City and State have other policy commitments that compliment, understanding how these flow into the Study. This is where we rely on Advisory Group to help us understand.
- Scale of the problem, and understanding how that might impact your results.
- Timing of use and resiliency - understanding how load change over time works within the system.
- It is not just the City, but the County as well, which represents a very large group of people. The Study should include how efficiencies in neighboring regions can complement this effort.

LADWP and the Research Partner have developed a conceptual process chart to provide a broad timeline and outline of activities. Aaron provided a review of the timeline, including the variety of products that come out of this study, and general timing of when certain activities will occur. Stages of the Study include:

- **Data Gathering:** Identifying overall scope and data sources, and forming the Advisory Group.
- **Formulation:** Qualitatively defining the scenarios that will be analyzed, and determining what is feasible – are we aiming for a truly 100% fossil fuel free scenario? Do we look only to 95% because that is what is feasible? Do we consider just 100% renewable electricity, or the much broader goal of 100% renewable energy?
- **Modeling and Development:** Inputting data that has been gathered from many sources into computational models. This stage includes comprehensive analysis of topics such as economics, energy efficiency, demand response, and market impacts. As you are investing in and building new technologies, where is the best place to do this?
- **Simulation:** Presentation of preliminary results and revisions. Visualization is very important in this stage, as it helps with understanding of the results.
- **Conclusions:** Identifying key messages and disseminating information.

Questions and Discussion:

Q: How much renewable energy is produced within the Los Angeles region?

A: This is a topic that we will discuss.

Comment: We should consider contingency plans for these scenarios – what happens if the technology does not work?

Q: There was concern about the compression of time in which these concepts are being presented to the Advisory Group. Are there enough opportunities to have discussion within each phase, and to flush out scenarios in depth?

A: The frequency of Advisory Group meetings is at minimum once a quarter, and LADWP and the Research Partner will host as many meetings as necessary.

Q: In isolation, how long would it take NREL to prepare this plan? Could it be done in 6 months?

A: You may be able to complete the Study in that time, but it would not be as robust.

Comment: There are a number of considerations from the perspective of the transportation industry, including the speed at which technology is developing and the lifecycle and environmental concerns of equipment. Where do these transportation considerations fit?

Comment: We should also consider how timing of the development of the technology lines up with workforce development.

Aaron noted that business cases are an important aspect of the Study, and that is very beneficial to look at a range of examples from various extremes.

5. Data, Modeling, and Analysis

Aaron Bloom, NREL, gave an overview of the NREL and noted that the Laboratory takes pride in the quality and reliability of the studies that they produce. Models enable understanding of what future conditions might look like. Aaron stressed the importance of using high quality data with high quality models. NREL has invested a significant amount of money into developing the models that will be used for this study.

Aaron Bloom, NREL gave an overview of the types of models NREL will be using, what they do, and how they fit within the Study. Analysis of modern power systems needs more comprehensive tools that can help break down barriers between transmission and distribution – this becomes important when considering distributed generation. Improved technology will allow for development and use of these tools.

Data Needs

Demand side – Rather than cycling up generation, understanding the demand side of energy usage can reduce the need for energy. What are the specific demands on the system, and what controls do we have over these factors? It is important to understand the unique challenges of Los Angeles and its specific buildings and energy users. These are going to be some of the first tools that are employed for the Study, as this concept is critically important.

Topology – Topology refers to the network of wires that carry power through the system, for which there is a large amount of information available. It is important to know how Los Angeles affects the system as a whole. Understanding distribution can be more challenging than understanding transmission, as there is uncertainty in the data.

Supply side – Supply side refers to the sources of generation. It is important to understand the solar, wind, and geothermal resources around the region, because these are critical elements for renewable energy generation. There are a variety of informational resources for understanding these elements, including wind pattern surveys and satellite imaging. Construction and operation costs are also an important consideration.

Modeling Domains

Planning – Planning considers what, where, and when you build, and when you retire it. NREL has built the Resource Planning Model, which is designed to understand a very concentrated portfolio of renewables. NREL considers 2040 – 2045 as a possible timeline in which these renewable resources can be built.

Aaron gave an overview of the Distributed Consumer Adoption Model, which uses a very rich data set to help understand what drives consumers to adopt renewable energy technologies. NREL is currently working with the California Public Utilities Commission (CPUC) to collect more data for this model. Aaron shared a possible visualization that can represent results from analyzing planning data.

Production Cost Modeling – This domain considers generator scheduling and operation within the system in real-time. With renewables, this area of modeling has grown significantly over the last ten years. In this modeling work, the North American Electric Reliability Corporation (NERC) reliability standards must be met.

Questions and Discussion:

Q: What level of detail are you analyzing when gathering data on energy uses?

A: NREL will leverage all types of survey data, create a characterization of what each type of building in Los Angeles looks like, then conduct modeling to define a realistic baseline specific to Los Angeles.

Q: Has LADWP done a demand response study in the past?

A: LADWP has some data available, and will feed all of the available data into models.

Comment: Human behavior is a big part of demand response.

Aaron noted that there were a number of large load users in the room, and all are encouraged to share load data with NREL.

Comment: Electrification of transportation is an important consideration.

Q: How do you address supply resources on a regional basis?

A: Scarcity of resources is a very important consideration – i.e. many regions going after the same renewable energy production resources – and the models will consider this.

Q: How does the Distributed Consumer Adoption Model consider people who may want to adopt solar but cannot afford it?

A: This is reflected in the model, thorough data gathered from solar installers, show homeowners who requested a quote and did or did not accept.

Q: How are you calculating impacts on health and air quality into this?

A: These models actually produce data on emissions, and these are fed into other models.

6. Advisory Group Feedback and Q&A

Advisory Group members were given an opportunity to give general feedback and ask additional questions of the team.

Comments:

- There should be specific language from this group, clarifying that model output, rather than just the models themselves, is the intended goal of the Study.
- There are a variety of storage methods beyond batteries, including pumped storage, thermal energy storage, and power to gas.
- The Study should consider distributed hydrogen fuel cells.
- Hydrogen and renewable natural gas should be considered as valuable resources.
- Some members would like to come into the next meeting more prepared to discuss scenario models, which means distributing simple information to Advisory Group members before the meeting. This will help the Advisory Group members more easily digest the technical information.
- Does demand response contribute to renewable energy if it forces large scale energy users such as ships and large building to take measure such as utilizing diesel generators to compensate?
- It may be beneficial to conduct smaller study groups between larger Advisory Group meetings, to help understand the models better.
- Aaron Bloom advised the group to think about what technologies or practices are most important to them.
- Many group members asked for more digestible information.
- There are often certain biases in preparing these studies, and the team should consider this.
- We should think positively about this group. The members at this table want to see real greenhouse gas reductions and want to consider electrification.

Questions:

Q: Has Southern California Association of Governments been involved?

A: Not yet, but please forward that question to Anton and we will address it.

Q: What is the level of detail of energy use data is included in the model? There are some sensitivities around sharing data.

A: Not yet, but please forward that question to Anton and we will address it.

7. Wrap-up and Next Steps

Next Meeting:

While the next meeting is tentatively scheduled for November 13th, this date will need to be reconsidered due to time conflicts. LADWP and the Research Partner will work on a date and get back to members.

Due to time restrictions, there is still information on modeling domains to be covered, which will happen at the next meeting.

Focus of the next meeting is going to be on finishing the presentation, having a discussion around scenario concepts, and seeking input on broader public outreach and involvement.

Aaron Bloom, NREL, suggested that Advisory group members watch the Energy Gang “Inconvenient Truth about Cities and Sustainability” podcast prior to the next Advisory Group Meeting. The podcast can be found here: <https://soundcloud.com/the-energy-gang>.

Actions:

- Advisory Group members should think about and prioritize renewable energy technologies and policies that they care about.
- Advisory group members to watch the Energy Gang “Inconvenient Truth about Cities and Sustainability” podcast prior to the next Advisory Group Meeting.
- LADWP will send the presentation and summary to Advisory Group members.
- Any Advisory Group member wishing to send materials to the group should send them to Anton Sy, who will distribute.